

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



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| In re Patent Application of Mario LECLERC et al. | |
| U.S. Patent Application No. 10/003,774 | Docket No.: 146617.00000 |
| Filed: October 31, 2001 | |
| For: CONJUGATED POLYCARBAZOLE DERIVATIVES AND PROCESS FOR THE PREPARATION THEREOF | |

E.L.G.
7/11/02
#5

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

CLAIM FOR PRIORITY

Sir:

The benefit of the filing date of the following priority application filed in the following foreign country is hereby requested, and the right of priority provided in 35 U.S.C. 119, is hereby claimed.

In support of this claim, filed herewith is a certified copy of said original foreign application:

Canadian Patent Application No. 2,324,757 filed October 31, 2000.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David W. Woodward".

David W. Woodward
Reg. No. 35,020
Attorney for Applicant

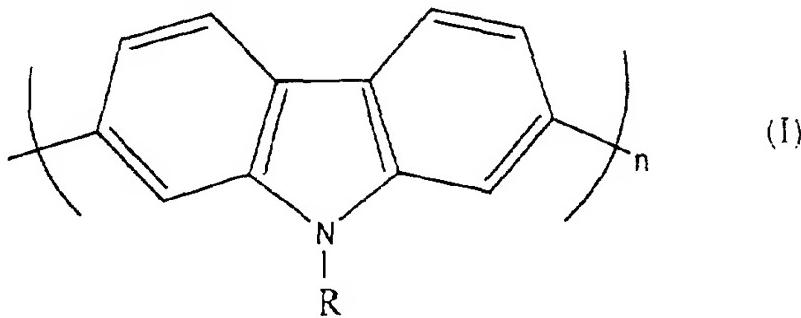
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P.O. Box 97233
Washington, D.C. 20090-7233
(202) 624-3913

Dated: February 7, 2002

DWW/yea

AMENDMENTS TO THE CLAIMS:

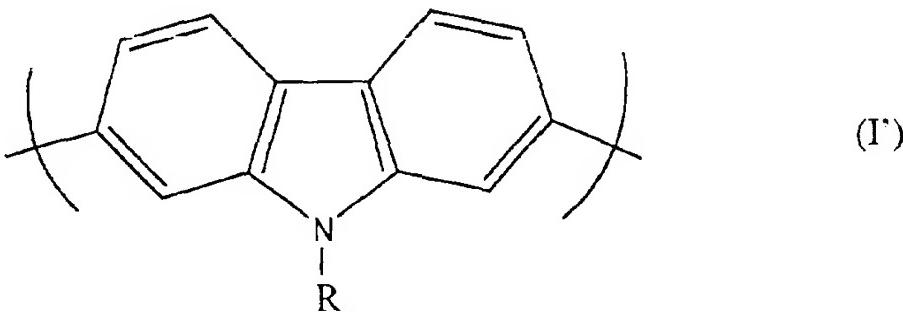
1. (Currently Amended) A conjugated poly(N-alkyl-2,7-carbazole) of formula (I):



wherein R represent a linear or branched alkyl group having 1 to 22 carbon atoms and n is an integer of about 3 to about 100, and when R is a decyl radical, n is not an integer of from 3 to 6.

2. (Currently Amended) A conjugated homopolymer selected from the group consisting of poly(N-octyl-2,7-carbazole) and poly(N-octadecane-2,7 carbazole).

3. (Original) A conjugated polymer comprising alternating units of formula (I'):

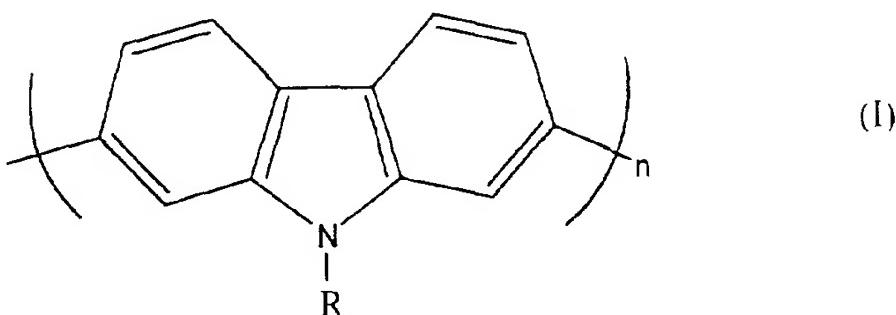


wherein R represents a linear or branched alkyl group having 1 to 22 carbon atoms.

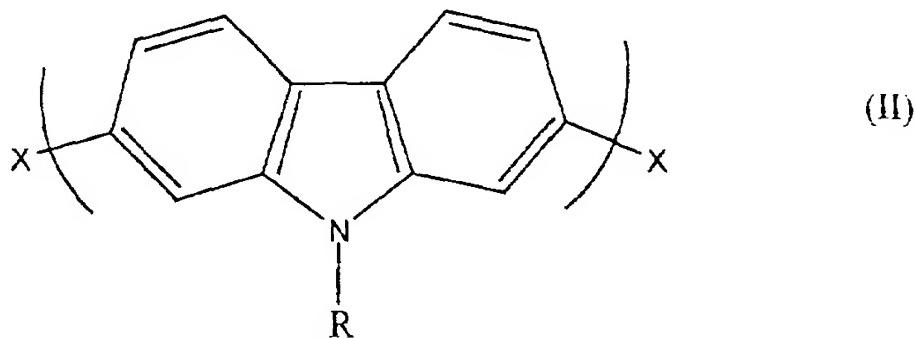
4. (Original) A conjugated polymer selected from the group consisting of poly(N-octyl-2,7-carbazole-alt-9,9-dioctyl-2,7-fluorene), poly[N-2-ethylhexyl-2,7-carbazole-alt-5,5'-bithiophene)], poly (N-octyl-2,7-carbazole-alt-2,5-thiophene), poly (N-octyl-2,7-

carbazole-*alt*-2,5-dioxyethylenethiophene), and poly (N-(2-ethylhexyl)-2,7-carbazole-*alt*-4-butyl-N,N-bis(*p*-phenyl)phenylamine).

5. (Currently Amended) A process for preparing a conjugated poly(N-alkyl-2,7-carbazole) of formula (I):



wherein R represents a linear or branched alkyl group having 1 to 22 carbon atoms and is an integer of about 3 to about 100, which comprises treating a N-alkyl-2,7-difunctionalized difunctionalized carbazole of formula (II):



wherein R is as defined above and X represents a trifluoromethanesulfonyl group or a halogen atom selected from the group consisting of bromine, ~~chlorine~~ chlorine and iodine atoms, with triphenylphosphine and 2,2'-bipyridine in the presence of zinc and nickel chloride, to cause polymerization of the compound of formula (II).

6. (Original) A process according to claim 5, wherein use is made of a compound of formula (II) in which R is an octyl group and X is an iodine atom or a trifluoromethanesulfonyl group.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by chem.

Abstract 126: 212647 or 119: 250891 or 119: 181323 or 114: 31798 or 111: 40172.

The references disclose the conjugated poly(N-alkyl-2,7-carbazole) of the claimed formula.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chem Abstract 131: 88268 or 119: 181323 or 114: 31798 or 111: 40172.

131: 88268 discloses the synthesis of a conjugated polycarbazole derived from 9H-carbazole-3,6-dicarbonyl dichloride.

119: 181323 discloses the polymerization of 3,6-dibromo-N-alkylcarbazole using Ni catalytic species.

114: 31798 discloses the use of a catalytic Ni based system to form poly(N-alkyl-3,6-carbazolediyi) thin film.

Art Unit: 1711

111: 40172 discloses polymers of carbazole derivatives using a 3,6-dibromocarbazole.

The disclosures of the references differ from the instant claims in that they do not disclose the claimed carbazole of formula (II) with so many variations.

However, they do disclose specific carbazole reactants under the same or similar conditions to form the same or similar products. Therefore, it would have been obvious to one of ordinary skill in the art to select the reactants under process conditions to get the claimed product of the claimed formula since they have been shown to be effective in a similar system and thus would have been expected to provide adequate results.

There is no showing of unexpected results derived from said selections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Truong whose telephone number is 703-308-2437.

The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703-308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9791 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



DT
March 14, 2003

DUCTRUONG
PRIMARY EXAMINER